

USSR

UDC: [621.315.21:537.312.62]:001.4

MIKHNEVICH, G. V., deceased, BLINKOV, Ye. L., ~~GOLDENBERG, Ye. S.~~, Moscow

"Using the Effect of Superconductivity to Improve Electric Power Transmitting Technology"

Moscow, Izv. AN SSSR: Energetika i Transport, No 4, Jul/Aug 72, pp 6-13

Abstract: The principal characteristics and design peculiarities of superconducting electric power transmission lines are discussed. The paper gives the results of experimental research conducted on a laboratory model of a superconducting line, as well as the results of a technical and economic comparison between lines of this type and a conventional high-voltage cable. The experimental results show the technical feasibility of a superconducting cable with total heat influx and heat release in a current-conducting system of no more than 0.1 W/m. A technical and economic analysis based on a detailed calculation of the electromagnetic, hydrodynamic and heat processes in an AC superconducting cable show that with the transmission of high powers it would be possible to reduce the cost of the cable by 2-3 times as compared with a conventional high-voltage cable while simultaneously reducing energy transport losses by a factor of approximately 25 times.

1/1

- 207 -

USSR

UDC: 621.315.2.05:537.321.62

BLINKOV, Ye. L., ~~GOL'DENBERG, Ye. S.~~ Moscow

"Optimizing the Conditions of Circulating Coolants in Cryogenic Cables"

Moscow, Izv. AN SSSR: Energetika i Transport, No 4, Jul/Aug 72, pp 101-107

Abstract: Assuming predetermined parameters of coolant flow at the ends of a cryogenic cable, the authors determine the maximum spacing between cooling units which corresponds to the condition of setting the viscosity of losses in the flow equal to half of the other heat influxes to the coolant. Requirements for selecting coolant flow conditions are formulated. It is shown that low flow enthalpy corresponds to supercritical helium parameters.

1/1

USSR

UDC 699.841

GOL'DENBLAT, I. I., Doctor of Technical Sciences, Professor, POLYAKOV, S. V., Doctor of Technical Sciences, and AYSENBERG, YA. M., Candidate of Technical Sciences, Central Scientific Research Institute of Structural Parts imeni V. A. Kucherenko (Moscow)

"The Theory of Seismic Resistance -- Science and Engineering Practice"

Moscow, Stroitel'naya Mekhanika i Raschet Sooruzheniy, No 2, 1973, pp 3-7

Abstract: In a discussion of the aims and methods of present-day calculations of buildings with respect to seismic action, the authors present their viewpoint with regard to the content, the specific features and prospects of development of the cost theory of buildings, and discuss the relationship between the theory and the engineering approaches to a solution of practical problems of the designing and construction of buildings for seismic regions. Attention is drawn to the importance of proper selection of the calculated building models and seismic actions on the basis of logical judgments, engineering intuition, and experience. 2 figures. 3 references.

1/1

- 19 -

USSR

Book

UDC 539.3

GOL'DENBLAT, I. I.

"Nelineynyye Problemy Teorii Uprugosti (Nonlinear Problems in Elasticity Theory),"

Moscow, Nauka, 1969, 336 pp (from Referativnyy Zhurnal, Mekhanika, No 7, 1970, Abstract No 7V34K by L. A. Tolokonnikov)

Abstract: The first chapter of the book enumerates some general problems of the mechanics of a continuous medium; the second chapter presents the equations of classical elasticity theory, and introduces the tensor of deformation incompatibility. The third chapter presents the basic equations of nonlinear elasticity theory in terms of Lagrange, Euler, and concomitant coordinates. The fourth chapter deals with special problems in nonlinear elasticity theory. Chapter 5, in which is set forth the thermodynamics and kinetics of deformations, occupies almost half of the entire book. The sixth chapter sets forth the theory of the interaction of an elastically deformable medium with the gravitational field.

1/1

USSR

UDC 539.3

GOL'DENVEYZER, A. L. (Moscow)

"Classification of the Integrals of Dynamic Equations of the Linear Bivariate Theory of Shells"

Moscow, Prikladnaya Matematika i Mekhanika, No 4, 1973, pp 591-603

Translation: A classification similar to the kind that has been established for static equations of the linear theory of shells is established in the present paper for the integrals of dynamic equations of the linear bivariate theory of shells. Variants of approximate equations corresponding to this theory are derived. It is shown that a more divided classification is expedient in the case of dynamics; in such a classification account must be taken of the desired stressed state not only on the basis of geometrical variables, but also on the basis of time. 10 references.

1/1

USSR

GOL'DENVEYZER, A.L., ZVERYAYEV, YE. M. (Moscow)

"The Stressed State of Unfastened Shells of Zero Curvature"

Moscow, Prikladnaya Matematika i Mekhanika, No 2, March-April 1971, pp 194-205k

Abstract: An investigation is made of the stressed state of a thin elastic shell of zero curvature with free edges. It is derived that the conditions for the zero-moment state formulated by I.N. Vekua for shells of positive curvature remain in force also for shells of zero curvature, if the edges of such a shell are nonasymptotic. It is shown that the stressed state and the deformability of a shell increase greatly even in case of small inflections of zero-moment conditions. 5 figures, 2 bibliographic entries.

1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--PACKING OF MOLECULES IN CRYSTALS OF ANTHRAQUINONE AND ITS
1,5,DIHALO DERIVATIVES -U-
AUTHOR-(04)-BELSKIY, V.K., CHETKINA, L.A., ZORKIY, P.M., GOLDER, G.A.
COUNTRY OF INFO--USSR
SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 262-7
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CRYSTAL, ANTHRAQUINONE, MOLECULAR INTERACTION, MOLECULAR
STRUCTURE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1995/1410 STEP NO--UR/0070/70/015/002/0262/0267
CIRC ACCESSION NO--AP0116857
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0116857

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERMOL. INTERACTION ENERGY WAS CALCD. BY USING THE ATOM ATOM APPROXN. (A. KITAIGORODSKII AND MIRSKAYA, 1961; ZORKII, ET AL., 1967), AND THESE VALUES WERE USED IN COMBINATION WITH AN ANAL. OF THE INTERMOL. CONTACTS TO COMPARE THE STRUCTURES OF ANTHRAQUINONE AND ITS 1,5-DIHALO DERIVS. THE INTRODUCTION OF EVER BIGGER SUBSTITUTING GROUPS INTO THE MOL. RESULTS IN A SMOOTH CHANGE IN THE STRUCTURE. IN THE 2 EXTREME CRYSTALS (ANTHRAQUINONE AND ITS I DERIV.), THERE IS A SIMILAR MOTIF FOR THE MOL. PACKING, WHICH DIFFERS FROM THE OTHER STRUCTURES. THE RESULTS SHOWS HOW THE GEOMETRIC CHARACTERISTICS OF THE MOL. AFFECT THE MOL. PACKING AND, CONSEQUENTLY, THE PHYS. PROPERTIES. FACILITY: NAUCH. ISSLED. FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 547.341

PYRKIN, R. I., LEVIN, Ya. A., and GOL'DFARB, E. I., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Kazan' Branch of the Academy of Sciences, USSR

"Reactions in the System $C_2H_4-PBr_3-AlBr_3$ "

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 8, Aug 73, pp 1705-1713

Abstract: A complex of reactions in the system $C_2H_4-PBr_3-AlBr_3$ leads to the final products including β -bromoethyldibromophosphine, tetrabromophosphine, and a complex of bis- β -bromoethyltribromophosphorane. A reaction sequence is proposed which includes an electrophilic attack by a bromine atom of the ethylene at the positively charged phosphorus atom of the complex $BrCH_2CH_2^+PBr_3BrP^-AlBr_3$, which forms as a result of a nucleophilic attack of PBr on the α -carbon atom of the complex $BrCH_2CH_2PBr_2^+AlBr_3$. Ethylene enters the $BrCH_2CH_2PBr^+Al^-Br_4$ complex at the $P-Br$ bond. Synthesis of bis- β -bromoethylphosphinic acid and its esters was developed, based on the hydrolysis or alcoholysis of the complex $(BrCH_2CH_2)_2PBr_2^-AlBr_4$ forming directly in the system $C_2H_4-PBr_3-AlBr_3$.

1/1

- 15 -

USSR

UDC 542.91:547.1'118

ARBUZOV, B. A., NURETDINOVA, O. N., NIKONOVA, L. Z., GOL'DFARB, E. I.,
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov of the
Academy of Sciences of the USSR

"Reaction of Phosphorous Acid Chlorides With Oxetanes"

Moscow, Izv. AN SSSR: Ser. Khimicheskaya, No 3, Mar 73, pp 627-632

Abstract: A study is made of the reaction of PCl_3 and alkylphosphorous acid dichlorides with 2-methyloxetane and 3,3-dimethyloxetane in other than 1:1 reagent ratios. The equations of 18 reactions are given together with the experimental details of eight reactions and physical constants of 23 synthesized phosphorous acid derivatives.

1/1

- 22 -

USSR

UDC 542.91+541.6:547.1'118

ANOSHINA, N. P., GOL'DFARB, E. I., VOSKRESENSKAYA, O. V., KIRPICHNIKOV, P. A., and MUKOMENEV, E. T., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR, and Kazan' Institute of Chemical Technology imeni S. M. Kirov

"Use of the Arbuzov Reaction to Establish the Structure of Tricyclic D-Mannitol Triethyl Triphosphite"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 72, pp 1390-1395

Abstract: The authors used the Arbuzov reaction to establish the ring size in tricyclic D-mannitol triethyl triphosphite. A study was made of the reaction with ethyl bromide of tricyclic triethyl triphosphite and phosphites which model it, obtained from 1,2; 5,6-di- and 3,4-O-isopropylidene-, as well as 1,3; 4,6-di- and 2,5-O-methylene-D-mannitols. Differential thermal analysis and ^{31}P -NMR data indicate that tricyclic D-mannitol triethyl triphosphite represents 2-ethoxy-4,5-bis-(2'-ethoxy-1',3',2'-dioxaphospholanyl-4')-1,3,2-dioxaphospholane.

1/1

USSR

UDC 661.718.1' + 547.77

ARBUZOV, B. A., VIZEL', A. O., IVANOVSKAYA, K. M., and GOL'DFARB, E. I.,
Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy
of Sciences USSR

"Reaction of 2-Oxo-2-chloro-3,3,5-trimethyl-1,2-oxaphospholene-4 With
Ethylene Glycol"

Leningrad, Zhurnal Obshchey Khimii; Vol 43 (105), No 10, Oct 73, pp 2134-2137

Abstract: The reaction of 2-oxo-2-chloro-3,3,5-trimethyl-1,2-oxaphospholene-4 with ethylene glycol was studied under various conditions: with or without solvent, different ratios of the reagents, with or without triethylamine. In all cases only one acyclic product was obtained: 2-oxo-2-(1,1-dimethyl-3-oxobutyl)-1,3,2-dioxaphospholane, b.p. 140-141°/0.01 mm, n_D^{20} 1.4727, d_4^{20} 1.2221. Formation of a cyclic dioxaphospholane structure requires more vigorous reaction conditions.

1/1

- 23 -

USSR

UDC 542.91:547.85:547.1'118

REZNIK, V. S., BAKULIN, V. S., IVANOV, B. YE., GOL'DFARB, E. I., and
SAMARTSEVA, S. A., Institute of Organic and Physical Chemistry Imeni A. Ye.
Arbuzov, Acad. Sc. USSR

"Synthesis and Properties of Pyrimidinylalkylphosphonic Acids. Communication
7. Synthesis and Properties of Uracylphosphates"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 4, Apr 73,
pp 879-883

Abstract: The sodium salt of uracyl reacted with diphenylchlorophosphate (I)
in absolute benzene to yield 2,4-bis(diphenylphosphonoxy)-pyrimidine. Reac-
tion of the sodium salt of 1,6-dimethyluracyl with (I) in m-xylene gives 1,6-
dimethyl-4-(diphenylphosphonoxy)uracyl, and the reaction of the sodium salt of
3,6-dimethyluracyl with (I) in m-xylene gives a mixture of inseparable isomers.
All of these uracylphosphates react with alcohols at about 20° giving quanti-
tative yields of uracyls and corresponding alkylidiphenylphosphates.

1/1

- 46 -

USSR

UDC 547.26'118

PUDOVIK, A. N., PUDOVIK, M. A., TEREENT'YEVA, S. A., and GOL'DFARB, E. I.,
Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Acad. Sc.
USSR

"Reactions of the Derivatives of Trivalent Phosphorus With Orthoaminophenol"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, pp 1901-1906

Abstract: A mixture of isopropylphosphorous acid tetraethyldiamide and o-aminophenol was heated for 1-2 hrs at 130-140° to yield 2-isopropoxy-4,5-benzo-1,3,2-oxaazaphospholane (I), b.p. 95-97°/0.03 mm, m.p. 58-60°, and 1,6-dioxa-4,9-diaza-2,3,7,8-dibenzo-5-phosphaspiro[4,4]nonane, m.p. 161-162°. 2-Ethoxy-4,5-benzo-1,3,2-oxaazaphospholane, b.p. 77-78°/0.03 mm, d_4^{20} 1.1948, n_D^{20} 1.5553 was obtained in an analogous manner. Sulfur added to molten (I) followed by heating for one hour at 100° gave 2-isopropoxy-2-thia-4,5-benzo-1,3,2-oxaazaphospholane b.p. 120-130°/0.03 mm, m.p. 92-94°. It has been shown that 2-ethyl-4,5-benzo-1,3,2-oxaazaphospholane undergoes protropic isomerization on storage, converting to 2-ethyl-4,5-benzo-1,3,2-oxaazaphospholene-2.

1/1

- 44 -

USSR

UDC 542.91:547.1'118

IVANOV, B. Ye., SAMURINA, S. V., LEBEDEVA, N. N., AGEYEVA, A. B., and
GOL'DFARB, E. I., Institute of Organic and Physical Chemistry, imeni
A. Ye. Arbuzov, Academy of Sciences, USSR

"Reaction of o-Hydroxybenzyl Alcohol With Phosphorous Acid Esteramides
and Amides"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 73,
pp 1825-1827

Abstract: The reaction of o-hydroxybenzyl alcohol with diethylamidodiethyl-
phosphite, bis(diethylamido)ethyl phosphite and tris(diethylamido) phosphite
was studied. It was established that in the nucleophilic substitution re-
actions, the nucleophilic center may be at the phosphorus atom or at the
nitrogen atom in phosphorous acid esteramides and amides.

1/1

SR

UIC 540.953:61.738.1

IVANOV, B. YE., KUDRYAVTSEVA, L. A., ZYABLIKOVA, T. A., LYTVAL, T. G., and GOL'DFARB, E. I. Institute of Organic and Physical Chemistry of A. Ye. Arbuzov of the Academy of Sciences USSR

"Condensation of Diethylphosphorous Acid with Formaldehyde and Triethyl Phosphite"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7, 1971, pp 1497-1502

Abstract: Condensation was carried out in the ternary system triethyl phosphite (TEP)-formaldehyde-diethylphosphorous acid (DEP). The formation of the product, diethyl ester of ethylphosphonic acid (I), results from the partial isomerization of triethyl phosphite in the presence of diethylphosphorous acid. Other products formed included: diethyl ester of alpha-hydroxyethylphosphonic acid, diethylphosphonomethyl diethyl phosphite, bis-(diethylphosphono) methyl ester, 2,5-dioxo-2,5-dihydroxy-1,4,2,5-dioxadiphospholane, and a product with the gross formula $C_{12}H_{20}O_6P_2$. The latter is probably a mixture of isomers of ortho-phosphoric and isortho-phosphoric acids. The structure of each product was proven by chemical and physical methods. These included nuclear magnetic

1/2

USSR

IVANOV, B. Ye, Investiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7,
1971, pp 1497-1502

resonance spectra, melting-point tests, and infrared spectra. Different quantitative ratios of the ternary system components were combined to provide data for the corresponding multi-product yield percentages for each ternary component ratio used.

2/2

USSR

UDC 542.91:661.718.1

MUKHAMETOV, F. S., RIZPOLOZHENSKIY, N. I., and GOL'DFARB, E. I., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Reactions of Ketoalcohols with Organophosphorus Compounds. 5 Communication. Reaction of β -Ketoalcohols with Chlorophosphines"

Moscow, Izvestiya Akademii Nauk SSSRm Seriya Khimicheskaya, No 10, Oct 71, pp 2221-2225

Abstract: Reaction of β -ketoalcohols (I) with chlorophosphines (II) in the absence of organic bases yields tertiary phosphine oxides; ethylphenylphosphine chloride and β -acetoethyl alcohol give 3-ketobutylethylphenylphosphine oxide, b.p. 135-137°/0.015 mm, n_D^{20} 1.5395, d_4^{20} 1.1107. The

reaction was monitored by means of IR spectroscopy. On the basis of spectral analysis it was proposed that the first step in the reaction of β -ketoalcohols with chlorophosphines is the formation of an acid $R'R''P(=O)H$ and an unsaturated ketone $R''R'''C:CHC(=O)CH_3$ which then combine to yield the final product.

1/1

- 60 -

R

UDC 542.91 + 661.718.1

2

ARBUZOV, B. A., RIZPOLCZHENSKIY, N. I., VIZEL', A. G., IVANOVSKAYA, K. M., MUKHAMEDOV, F. S., and GOL'DFARB, E. I., Institute of Organic and Physical Chemistry imeni A. M. Arbuzov, Acad. Sc. USSR

"Synthetic Routes of 1,2-Oxaphospholene Derivatives in the Reaction of β -Ketoalcohols With Acid Chlorides of Trivalent Phosphorus Acids"

Moscow, Izvestiya Akademii Nauk, SSSR, Seriya Khimicheskaya, No 1, Jan 71, pp 117-125

Abstract: In studying the reaction of β -ketoalcohols with acid chlorides of trivalent phosphorus acid, a series of 1,2-oxaphospholene derivatives was obtained. The reaction took place in several definitely marked stages. For example, dropwise addition of phenyldichlorophosphine to cooled diacetone alcohol resulted in an initial exothermic reaction producing a precipitate; the liquid portion becoming yellow, and an odor of mesitylene oxide becoming noticeable. The second half of the process occurred slowly, the precipitate disappeared, the reaction mixture becoming again almost colorless. When the volatile pro-

1/2

GR

ARBUZOV, B. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 1, Jan 71, pp 117-125

ducts were removed, the reaction mixture crystallized, and finally liquefied again on distillation. A five stage mechanism has been proposed for this reaction: the first stage consisting of an alcoholysis of acyl chloride leading to the formation of an acid which then reacts with more starting material to produce a new acyl chloride, a very reactive compound which adds rapidly to the unsaturated ketone formed in the first stage to yield a ketochloride $RP(:O)Cl-CR_2CH_2COCH_3$ which isomerizes to 1,2-oxaphospholane. In the final step a molecule of HCl are not conjugated yielding 1,2-oxaphospholene.

2/2

- 63 -

2

/ USSR

UDC 547.26:118:541.124

PUDOVIK, A. N., CHERKASOV, R. A., KUTYREV, G. A., SAMITOV, YU. YU.,
MUSINA, A. A., GOL'DFARB, E. I., Kazan' State University imeni
V. I. Ul'yanov-Lenin, Kazan, Ministry of Higher and Secondary
Specialized Education RSFSR

"Reactivity of Phosphorus Dithioacids in Reactions With Acryloni-
trile"

Leningrad, Zhurnal Obshchey Khimii, Vol 40, No 9, Sep 70,
pp 1982-1988

Abstract: This paper is concerned with the effect of substituents
A and B in phosphorus dithioacids of the type $ABP(S)_2SH$ on reaction
rates with 1,3-conjugated reagents such as acrylonitrile. It was
shown by means of kinetic measurements and differential-thermal
analysis that the reactivity of phosphorus dithioacids with
acrylonitrile increases in the order dithiophosphinates, dithio-
phosphonates, and dithiophosphates. A linear correlation $\lg k$ to
the total values of substituents $\sum \sigma_p$ was determined. Through the
use of NMR (P^{31}) spectroscopy, it was found that reactivity of
1/2

USSR

PUDOVNIK, A. N., et al, Zhurnal Obshchey Khimii, Vol 40, No 9,
Sep 70, pp 1982-1988

dithioacids increases with increase in the total number of electrons in the d orbitals of the phosphorus atom. It was also determined that the dominant role of the effect of the substituent conjugation at the dithioacid phosphorus atom in the transitional state is determined by the reactivity of dithioacids of the phosphate and phosphonate structures.

2/2

- 117 -

1/2 013 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--REACTIONS OF OXAPHOSPHOLANOLS WITH DIALKYL CHLOROPHOSPHITES -U-
AUTHOR-(03)-RIZPOLOZHENSKIY, N.I., MUKHAMETOV, F.S., GOLDFARB, E.I.
COUNTRY OF INFO--USSR
SOURCE--IZVESTIYA AKADEMII NAUK SSSR, SERIYA KHIMICHESKAYA, 1970, NR 3, PP
683-685
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HETEROCYCLIC BASE COMPOUND, ORGANIC PHOSPHORUS COMPOUND, ALKYL
PHOSPHITE, HETEROCYCLIC OXYGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3007/1301 STEP NO--UR/0062/70/000/003/0683/0685
CIRC ACCESSION NO--AP0136702
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0136702

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. ALKYL DICHLOROPHOSPHITES REACT WITH TWO MOLES OF DIACETONE ALCOHOL IN THE PRESENCE OF ORGANIC BASES TO FORM 2-ALKOXY-2-KETO-3,3,5-TRIMETHYL-1, 2-OXA-3-PHOSPHALANOLS (I). THE HYDROXYL IN I REACTS WITH DIALKYL CHLOROPHOSPHITES: (FORMULA SHOWN ON MICROFICHE). AT ROOM TEMPERATURE THE REACTION IS SLUGGISH DUE TO INTER AND INTRAMOLECULAR HYDROGEN BONDING, EVEN AT LOW REAGENT CONCENTRATIONS; STERIC HINDRANCE OF THE TERTIARY HYDROXYL IS PROBABLY ALSO IMPORTANT. THE REACTION REQUIRES FOUR TO FIVE HOURS IN BOILING BENZENE, IN THE PRESENCE OF TRIETHYLAMINE. (SHOWN ON MICROFICHE). FACILITY: INSTITUT ORGANICHESKOY I FIZICHESKOY KHIMII IMENI A. YE. ARBUZOVA, AN SSSR.

UNCLASSIFIED

1/2 013
UNCLASSIFIED
PROCESSING DATE--30CCT70
TITLE--REACTIONS OF OXAPHOSPHOLANOLS WITH PHOSPHORUS ACID MONOCHLORIDES
-U-
AUTHOR--(03)--RIZPOLOZHENSKIY, N.I., MUKHAMEDOV, F.S., GOLDFARB, E.I.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 683-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HETEROCYCLIC BASE COMPOUND, ORGANIC PHOSPHORUS COMPOUND,
ORGANIC OXIDE
CONTROL MARKING--NO RESTRICTIONS.
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1760
STEP NO--UR/0062/T0/000/003/0683/0685
CIRC ACCESSION NO--AP0123561
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123561

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF I WITH R PRIME1 R PRIME2 PCL IN THE PRESENCE OF ET SUB3 N IN C SUB6 H SUB6 5 HR AT REFLUX GAVE 42-73PERCENT II (R, R PRIME1, AND R PRIME2 SHOWN): SHOWN ON MICROFICHE. FACILITY: INST. ORG. FIZ. KHIM., KAZAN, USSR.

UNCLASSIFIED

USSR

UDC 620.186.5

GLEBOVA, E. D., GOL'DFARB, E. M., DUGANTSEV, A. YE., and FAYNSHTEYN, I. G. (Deceased)

"On the Welding of Automobile Steel Sheets During Annealing"

Dnepropetrovsk, Metallurgicheskaya i Gornorudnaya promyshlennost', No 5, Sep-Oct 70, pp 41-42

Abstract: A description is given of an experimental laboratory installation and procedure for studying the effect of the surface condition of samples, temperature, and annealing atmosphere on the welding of low-carbon steel sheets intended for use in automobile manufacturing. The degree of welding was evaluated by the tearing stress along the junction plane. A metallographic analysis of the surfaces of welded samples showed that welding begins in separate microsections having the aspect of viscous discontinuities corresponding to microsections having the aspect of viscous discontinuities corresponding to microbulging, i.e., traces of rollers. A durable junction between surfaces in contact appears as the result of an electron interaction process having a

1/2

- 32 -

USSR

GLEBOVA, E. D., et al, Metallurgicheskaya i Gornorudnaya promyshlennost', No 5, Sep-Oct 70, pp 41-42

quantum-mechanical nature. Surface polishing facilitates the formation of metallic bonds between surfaces. It was found that a neutral atmosphere contributes the most to decreased sheet welding during annealing. The dependence of tearing stress of welded samples on temperatures and annealing atmosphere is presented graphically.

USSR

UDC 541.515:547.1'118

LEVIN, YA. A., IL'YASOV, A. V., and GOL'DFARB, E. I., Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Acad. Sc. USSR

"Phosphonium Radical Ambidenty and Chemical Polarization of Phosphorus Nuclei in the Products of Its Reactions"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7, Jul 72, pp 1676-1677

Abstract: During photolysis of acetone, diethylketone, acetaldehyde, and in thermolysis of di-tert-butylperoxide, dicyclohexylpercarbonate, lauryl peroxide in dialkylphosphites, chemical polarization of the phosphorus nuclei is observed in $(RO)_2P-O-P(O)(OR)_2$ and in $(RO)_2P(:O)-P(:O)-(OR)_2$. The appearance of a multiplet effect in the subphosphates due to the spin-spin interaction in the system $P-O-P(O)$ shows that these compounds form by recombination of two phosphine radicals. Concurrent presence of polarized hypophosphate indicates a double reactivity of these radicals: through the oxygen or through the phosphorus. The multiplet effect in the subphosphate corresponds to the recombination of two independently generated phosphone radicals.

1/1

USSR

UDC 547.26'118 + 543.226

PUDOVIK, A. N., KONOVALOVA, I. V., YAGFAROV, M. Sh., GOL'DFARB, E. I., and ROMANOV, G. V.

"Decomposition of α -Hydroxyalkyl(benzyl)phosphonates"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, pp 556-559

Abstract: Thermal behavior of α -hydroxyalkylphosphonates containing alkyl and phenyl substituents at the α -carbon atom has been studied by means of differential-thermal analysis in the range 20-300°. Substituting a hydrogen atom for a methyl group at the α -carbon results in a higher temperature of the endoeffect of the beginning of breakdown, while introduction of a phenyl group lowers the thermal stability of the phosphonate. Differential thermal analysis of an equimolar mixture of O-ethylethylphosphonite and ethylpyro-racemate shows a formation of O-ethyl- α -carboethoxyethylphosphinate followed by its isomerization to O-ethyl-O-(α -carboethoxyethyl)ethylphosphonate; benzaldehyde and diethylphosphite from diethyl- α -hydroxybenzylphosphonate in temperature range 100-120° to be followed by decomposition. Thermography of phenyl- α -hydroxybenzylphosphinic acid at 220-250° is accompanied by a strong exothermic effect yielding a dense mass suggestive of the formation of phenylphosphine.

1/1

USSR

UDC 541.515:547.1'118

LEVIN, YA. A., IL'YASOV, A. V., GOL'DFARB, E. I., and VORKUNOVA, YE. I.,
Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Acad. Sc.
USSR

"Proof of the Existence of Phosphoroanilic Radicals"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7, Jul 72,
pp 1673-1674

Abstract: During the thermolysis of di-tertiary butyl peroxide in triphenylphosphite a negative polarization of phosphorus nuclei is observed in the intermediate product -- diphenyl-tert-butylphosphite and in triphenylphosphate. During the thermolysis of benzolazotriphenylmethane in trialkylphosphites a negatively polarized dialkylphenylphosphonate is formed. During the photolysis of CCl_3Br under a mercury lamp in triethyl- or tributylphosphites, concurrently with the negative polarization of phosphorus nuclei in dialkyltrichloromethylphosphonate and dialkylbromophosphate, a strong emission is observed in the starting phosphite. These facts are considered to be sufficient proof for the existence of a stable intermediate phosphoroanilic radical in the reactions cited.

1/1

- 40 -

USSR

UDC: 547.26'118

PUDOVIK, A. N., GUR'YANOVA, I. V., KAKURINA, V. P., GOL'DFARB, E. M., Kazan'
State Institute imeni V. I. Ul'yanov-Lenin

"On the Reaction of Dialkylchlorophosphites With Pyrroacemic Acid Esters"

Leningrad, Zhurnal Obshchey Khimii, Vol 40 (102), No 11, Nov 70, pp 2374-2376

Abstract: The authors study reactions of methyl and ethyl pyrroacemates with diethyl- and dibutylchlorophosphates. Various proportions of the reagents were reacted at temperatures ranging from 0 to 100°C. The reaction is most complete when the reagents are taken in an equimolecular ratio and reacted with moderate heating or allowed to stand at room temperature for a considerable length of time. Colorless viscous liquids are formed with quantitative release of alkyl chlorides. Elementary analysis and the molecular weight of the resultant products indicate that two molecules of pyrroacemate and two molecules of dialkylchlorophosphite participate in the synthesis. Two molecules of alkyl chloride are given off during the reaction. On the basis of these considerations, it is concluded that the reactions produce cyclic phosphonates -- 3,6-dimethyl-3,6-dicarboxy-1,4-dialkoxy-2,5-dioxo-1,4-diphosphorinanes. Formation of intermediate products was investigated by studying the P^{31} NMR spectra.

1/1

1/2 040 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--VARIATION METHOD FOR CONSTRUCTING TRANSPORT EQUATIONS IN
DISSIPATIVE SYSTEMS WITH ARBITRARY BOUNDARY CONDITIONS -U-
AUTHOR-(03)-GESKIN, E.S., GOLDFARB, E.M., KOTLYAR, B.D.
COUNTRY OF INFO--USSR
SOURCE--ZH. FIZ. KHIM. 1970, 44(2), 543-4
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--THERMAL CONDUCTIVITY, THERMAL DIFFUSION, THERMAL CONVECTION,
VISCOUS FLOW, TRANSPORT EQUATION, VARIATIONAL METHOD
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/0388 STEP NO--UR/0076/70/044/002/0543/0544
CIRC ACCESSION NO--AP0111581
UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0111581

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ON THE BASIS OF THE VARIATIONAL PRINCIPLE, EQUATIONS WERE OBTAINED FOR CORRELATING THERMAL COND. AND DIFFUSION ACCOUNTING FOR CONVECTIVE HEAT FLOW, SOURCES AND CROSSOVER PHENOMENA, AS WELL AS FLOW OF VISCOUS LIQUID. FACILITY: UKR. GOS. PROEKT. INST. METALLURGAVTOMAT., DNEPROPETROVSK, USSR.

UNCLASSIFIED

AAO 043494

G

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

1/70

241712 OPTICAL RANGE FINDER TEST to determine its parameters such as the range finder coefficient and the constant parallax angle becomes more accurate by one order of magnitude if during the determination of the parallax angle in each interval of the standard base level the varying parallax angles are measured, which correspond to the maximum possible and the minimum possible number of measuring staff base levels for the given interval.

8.12.67 as 1201911/18-10-~~P.R.GOLDFARB~~ (27.8.69) Bul 14/18.4.69. Class 42c. Int.Cl.G Olc.

711T

1/1

12

19761883

USSR

UDC 669.245'26.018.44 .539.4

BRAGIN, D. YA., SHKANOV, I. N., GOL'DFARB, I. P., ZABIBULLINA, N. V.

"Effect of the Technological Conditions of High-Temperature Thermomechanical Treatment on the Static and Fatigue Strength of Heat-Resistant Alloy"

Tekhnol. i organiz. proiz-va. Nauchno-proizv. sb. (Technology and Organization of Production. Scientific Production Collection), 1970, No 6, pp 94-96 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I765)

Translation: The results of studying the fatigue strength of parts made of KhN70MVTYuE high-alloy heat-resistant Cr-Ni alloy subjected to high-temperature thermomechanical treatment are described. Recommendations are made with respect to thermal conditions and degree of plastic flow insuring that high strength qualities will be obtained. There are 3 illustrations, 2 tables, and a 3-entry bibliography. [Kazan' Aviation Institute].

1/1

USSR

UDC: 621.373:530.145.6

GOL'DFARB, I. S.

"On Technical Noises in the Emission of Lasers Used in Optical Communications Systems"

Sb. Nauchn. tr. TsNII svyazi (Collected Scientific Works of the Central Scientific Research Institute of Communications), 1970, vyp. 1, pp 27-36 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D214)

Translation: The paper discusses noises in gas laser emission with a non-uniformly broadened line due to random variation of the optical length of the resonator. Assuming that the line has a Gaussian form and that the form of the dip is Lorentzian, expressions are found for maximum power fluctuations as a function of resonator length. Resumé.

1/1

- 126 -

USSR

UDC 621.52:539.23(088.8)

GOL'DFARB, V. A., GONCHAROV, E. V., and SYNOROV, V. F.

"Method of Vaporization of Materials in a Vacuum"

USSR Author's Certificate No 281997, filed 15 Aug 68, published 7 Dec 70 (from RZh-Elektronika i yeye primeneniye, No 7, July 1971, Abstract No 7A149P)

Translation: A method is proposed which makes it possible to accomplish a process of vaporization from an annular source, which in its turn leads to an increase of the uniformity and purity of the films obtained with its use. During use of the method, the specimen of the substance being sputtered is distributed in the form of disks on a dielectric base coaxial with the inductor, and the frequency of the electromagnetic field is matched in such a way that sputtering can take place only from the lateral face of the specimen. During this a thin layer of the substance on the lateral face melts and is vaporized. The middle part of the specimen is at a lower temperature and does not vaporize. If necessary the dielectric base on which the disks are distributed can be cooled, which completely eliminates the necessity for interaction of the material being vaporized with the material of the dielectric base. A.F.

1/1

- 55 -

USSR

UDC 621.43.011:533+621.5:533

GOL'DFARB, V. M., KOSTYGOVA, I. YE.

"Optical Study of a Supersonic Nitrogen Jet"

Uch. zap. Leningr. gos. ped. in-t im. A. I. Gertsena (Scientific Notes of Leningrad State Pedagogical Institute imeni A. I. Gertsen), 1971, Vol. 466, pp 76-86 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3B374)

Translation: The experimental technique and the results of a study of the population of electron, rotational and vibrational states and measurements of the concentration of plasma components in a supersonic nitrogen jet flowing into a region of reduced pressure are described. A brief survey of studies concerning the study of relaxation processes occurring in supersonic expansion of heated gases is given. A spectroscopic method was used in the experiments and the application of the equipment was described earlier (Gol'dfarb, V. M., Il'ina, Ya. V., Kostygova, I. Ye., Luk'yanov, G. A., Silant'yev, V. A., Zh. Prikl. mekhan. i tekhn. fiz., 1967, No. 1, pp 111-165: RZhMekh, 1967, 8B50). The basic measurements were made under the following conditions: pressure in the chamber of the arc plasmatron 410 mm Hg, pressure in the vacuum chamber 0.55 mm Hg, arc current 60 amp, voltage 56 v, nitrogen flow 0.07 g/sec. The

1/2

USSR

GOL'DFARB, V. M., KOSTYGOVA, I. YE., Uch. zap. Leningr. gos. ped. in-t im. A. I. Gertsena, 1971, Vol. 466, pp 76-86

radiation was recorded in a direction perpendicular to the axis of the jet. Spectral measurements were made with the UM-2 device with an attachment or a SD-2 diffraction spectrometer. Radiation intensity was measured over a wide spectral interval using a camera or the OAP-4 device. Data were obtained on the population of electron states and electron parameters of the plasma. Rotational and vibrational temperatures were calculated on the basis of the distribution of intensities in the bands. The results are analyzed. 14 ref. Yu. F. Dityakin.

2/2

- 133 -

6
USSR

UDC 621.373:530.145.6

GOYKHMAN, V. Kh., GOL'DFARB, V. M., DASHKEVICH, I. P., EYLENKRIG, G. S.

"Use of a High-Frequency Plasmatron to Determine the Emittance of Some Gases, and Also for Spectral Analysis of Solutions"

V sb. Primeneniye plazmatrona v spektroskopii (Use of the Plasmatron in Spectroscopy--collection of works), Frunze, "Ilim", 1970, pp 82-87 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D228)

Translation: The emittance of oxygen is measured in the visible region of the spectrum at temperatures of 6,000-9,000°K. It is shown that the spectral distribution of oxygen emission is due chiefly to recombination processes. Preliminary studies are conducted into the use of a high-frequency plasmatron for spectral determination of a number of elements. Three illustrations, bibliography of 31 titles. Résumé.

1/1

- 135 -

Acc. Nr.

AP0041534

Abstracting Service:

CHEMICAL ABST.

4/70

Ref. Code

UR 0366

89982d Reaction of arylsulfonyl compounds with an excess of organolithium reagent. III. Synthesis of 2,6-disubstituted alkylbenzenes. Karpenko, R. G.; Stoyanovich, F. M.; Raputo, S. P.; Goldfarb, Ya. D.; Inst. Org. Khim. im. Zelin-skogo, Moscow, USSR. Zh. Org. Khim. 1970, 6(1), 112-16 (Russ). The reaction of 1,2,6-BuLi₂C₆H₃ (I) with HCONMe₂, S-MeI mixt., Me₂SO, PhCHO, or Ph₂CO gave resp.: 1,2,6-Bu(OCH₃)₂C₆H₃, 1,2,6-Bu(MeS)₂C₆H₃ (II), 1,2,6-BuMe₂C₆H₃, 1,2,6-Bu[PhCH(OH)]₂C₆H₃, or 1,2,6-Bu[Ph₂C(OH)]₂C₆H₃. The oxidn. of II with H₂O₂ in AcOH gave 1,2,6-Bu(MeSO₂)₂C₆H₃. The action of BuLi-MeLi mixt. on PhSO₂ Bu-*tert* gave PhMe, PhBu, 1,3,2-(HO₂C)₂MeC₆H₃ (on treatment with CO₂), 1,3,2-(HO₂C)₂BuC₆H₃ (on treatment with CO₂). I. 1,2,6-MeLi₂C₆H₃ and 2-*tert*-BuSO₂C₆H₃CO₂H (on treatment with CO₂). The formation of all these products supports the transient existence of 1,2,6-*tert*-(BuSO₂)Li₂C₆H₃. CPJR

REEL/FRADE

19751402

USSR

UDC 632.95

STOYANOVICH, F. M., KARPENKO, R. G., GRORUSHKINA, G. I., GOL'DFARB, YA. L.,
Institute of Organic Chemistry imeni N. D. Zelinskiy

"A Method of making Dibenzothiophene Derivatives"

USSR Author's Certificate No 349692, filed 13 Aug 70, published 6 Sep 72
(from RZh-Khimiya, No 10, May 73, Abstract No 10M621P by T. G. Chekareva)

Translation: Dibenzothiophene derivatives, which are of interest as herbicides and insecticides, and can also be used as intermediates in organic synthesis, are synthesized by cyclizing 2-tert-Bu-2'-diphenylsulfinic acids or their halides in the presence of acid catalysts at 0-200°C. Cyclization takes place with splitting of the tert-butyl group. Example: 1 g of 2-tert-Bu-2'-diphenylsulfinic acid (I) and 10 ml of SOCl₂ are boiled for 2 hours, the excess SOCl₂ is driven off in a vacuum, the residue is dissolved in 20 ml of C₂H₄Cl₂ and 0.5 g of anhydrous AlCl₃ is added at 0°C with agitation for 20 minutes at that temperature, which is then raised to about 20°C, and the resultant reaction mass is allowed to stand for about 12 hours. The mixture is then poured into water, the organic layer is removed, washed in a 5% solution of NaOH, in water, and dried. After eliminating the solvent, the

1/2

USSR

STOYANOVICH, F. M., et al., USSR Author's Certificate No 349692, filed 13 Aug 70, published 6 Sep 72

result is 0.4 g of dibenzothiophen-5-oxide, melting point $185-7^{\circ}\text{C}$ (dilute alcohol). A similar process is used to synthesize dibenzothiophen-5-oxide-1-carboxylic acid, melting point $235-7^{\circ}\text{C}$ (alcohol). 0.95 g of I is heated with boiling in 10 ml of Ac_2O . The anhydride is driven off in a vacuum, and the residue is treated with hexane. After evaporating the solvent, the residue is distilled in a vacuum at $150^{\circ}\text{C}/0.1\text{ mm}$; the sublimate is dissolved in 5 ml of hot alcohol, the solution is filtered, evaporated to 2 ml, and cooled. The residue contains dibenzothiophene with a melting point of $98.5-9.5^{\circ}\text{C}$. A similar procedure gives dibenzothiophene-1-carboxylic acid with a melting point of $176-7^{\circ}\text{C}$ (hexane-benzene), methyl ether, melting point $68-9^{\circ}\text{C}$.

2/2

- 34 -

1/2 007 UNCLASSIFIED PROCESSING DATE--JUNCT70
TITLE--AROMATIZATION OF ADDUCTS OF FURAN SULFIDES WITH MALEIC ANHYDRIDE
-U-
AUTHOR--(03)--DANYUSHEVSKIY, YA.L., MARAKATKINA, M.A., GOLDFARB, YA.L.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(4), 865-70
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--FURAN, SULFIDE, MALEIC ANHYDRIDE, EPOXY COMPOUND, HETEROCYCLIC
OXYGEN COMPOUND, PHTHALIC ANHYDRIDE, ALDEHYDE, AROMATIZATION, SULFUR
ORGANIC COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--2000/2086 STEP NO--UR/0366/70/006/004/0665/0870
CIRC ACCESSION NO--AP0125673
UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--30OCT70
 CIRC ACCESSION NO--AP0125673
 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CONDENSATION OF MALEIC ANHYDRIDE (I) WITH 4,(RS,SUBSTITUTED),2,METHYLFURANS (II) (R EQUALS ET, PH, PHCH SUB2, BU) GAVE 5,(RS,SUBSTITUTED),3,METHYL,3,6,EPOXY,1,2,3,6,TETRAHYDROPHthalic ANHYDRIDES (III). IN CONTRAST TO II, 2,ALKYLTHIOFURANS OR 5,ALKYL,THIO,2,ALKYLFURANS DO NOT FORM STABLE ADDUCTS WITH I. THE TREATMENT OF III WITH COLD, CONCD. H SUB2 SO SUB4 AROMATIZED THEM TO 5,(RS,SUBSTITUTED),3,METHYLPHthalic ANHYDRIDES, WHICH WERE OXIDIZED WITH H SUB2 O SUB2 IN ACOH TO 5,(RSO SUB2,SUBSTITUTED),PHthalic ACIDS (IV). THE DISTN. OF IV IN VACUO GAVE THE CORRESPONDING ANHYDRIDES. THE SYNTHESIS OF II IS DESCRIBED. THE OXIDN. OF II GAVE 4,(RO SUB2 S,SUBSTITUTED),2,METHYLFURANS. THE REACTION OF II WITH HCONME SUB2 AND POCL SUB3 GAVE 3,(RS,SUBSTITUTED),4,METHYL,2,FURANCARBOXALDEHYDES.
 FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--PMR STUDY OF THE TAUTOMERISM OF MERCAPTUALDIMINES OF THE FURAN
SERIES -U-
AUTHOR--(03)-0000AND7, V.S., DANYUSHEVSKIY, YA.L., GOLDFARB, YA.L.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 675-8
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYDROGEN BONDING, STEREOCHEMISTRY, MOLECULAR STRUCTURE,
DIMETHYL SULFOXIDE, HETEROCYCLIC OXYGEN COMPOUND, HETEROCYCLIC NITROGEN
COMPOUND, MERCAPTAN, FURAN, ORGANIC COMPLEX COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3006/1361 STEP NO--UR/0002/70/000/003/0675/0678
CIRC ACCESSION NO--AP0135035
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135035

ABSTRACT/EXTRACT--(U) GP-D- ABSTRACT. PMR SPECTRA WERE REPORTED FOR IIR
EQUALS II, CYCLOHEXYL, BETA NAPHTHYL, PH PHCH SUB2). I EXIST
PREDOMINANTLY IN THE TAUTOMERIC FORM SHOWN ABOVE. THE INTERNAL H BOND
IN THE CHELATE CYCLE IS LESS STRONG THAN IN THE TYIOPHENE ANALOGS AS A
RESULT OF WHICH IT OFTEN BREAKS, IN PART UNDER INFLUENCE OF POLAR
SOLVENTS SUCH AS ME SUB2 SO, WHILE IN THE THIOPHENE ANALOG NO SUCH
CHANGE TAKES PLACE. THE CHEM. SHIFT OF H PRIMEL PROTON IN I DEPENDS ON
N SUBSTITUENTS AND ITS LARGEST VALUE IS FOUND WITH AROM. SUBSTITUENTS.
AT ELEVATED TEMP. THE EQUIL. OF TAUTOMERS SHIFTS TOWARD FORMS WITH C:NR
GROUPING AND THOSE WITH SH HYDROGEN BONDED TO N. FACILITY:
INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

172 013 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SYNTHESIS OF ALIPHATIC AMINO ACIDS FROM THIOPHENE DERIVATIVES. XII.
PREPARATION OF 2,OXOIMIDAZOLIDINE DERIVATIVES FROM DIAMINOMONOCARBOXYLIC
AUTHOR--(04)-FABRICHNYY, B.P., SHALAVINA, I.F., KOSTROVA, S.M., GOLDFARB,
YA.L.
COUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1091-100
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CHEMICAL SYNTHESIS, AMINO ACID DERIVATIVE, THIOPHENE, LACTAM,
NITRATION, CHLORINATED ORGANIC COMPOUND, UREA, SAPONIFICATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1350 STEP NO--UR/0366/70/006/005/1091/1100
CIRC ACCESSION NO--AP0135024
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0135024

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NITRATION OF 5, (5, CHLORO, 3, AMINO, 2, THIENYL) VALERIC ACID DELTA-LACTAM (I) WITH KNO SUB3 IN OLEUM NITRATED THE THIOPHENE RING IN THE 4, POSITION; HYDROGENOLYSIS OF THE PRODUCT OVER NI GAVE 7, 8, DIAMINONONANOIC ACID ZETA-LACTAM. SAPON. OF THIS GAVE MECH(NH SUB2 .HCL)CH(NH SUB2 .HCL)(CH SUB2) SUB5 CO SUB2 H. REACTION OF THIS WITH UREA IN NA SUB2 CO SUB3 SOLN. GAVE 4, (5, METHYLIMIDAZOL, 2, ON, 4, YL)CAPROIC ACID. SIMILARLY, 5, (5, (R-SUBSTITUTED), IMIDAZOL, 2, ON, 4, YL)CAPROIC ACIDS (R IS ME, ET, PR, BU, AMYL, ISOAMYL, OR N-HEPTYL) WERE PREPD. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr:

AP0049957

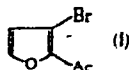
Abstracting Service:

CHEMICAL ABST.

Ref. Code:

4170 UR0409

90163u Synthesis of 3-bromofuran, and the product of its acetylation. Gol'dfarb, Ya. L.; Marakatkina, M. A.; Belen'kii, L. I. (Inst. Org. Khim. im. Zelinskogo, Moscow, USSR). *Khim. Geterotsikh. Soedin.* 1970, (1), 132-3 (Russ). 2-Acetyl-3-bromofuran (I) described as a liq. (Nazarova, Z. N.; *et al.*, 1969) in the cold is actually a solid, b₁ 107-10°, in a 4:1 mixt. of



I and 4-bromo-2-acetylfuran. I, m. 43.5-4° (semicarbazone m. 221-2°), with NaOBr gave 3-bromofuran-2-carboxylic acid, m. 159.5-60°. G. M. Kosolapoff

REEL/FRAME
19801895

USSR

UDC 547.241+547.391.1

GAZIZOV, T. Kh., VASYUNINA, M. A., PASHINKIN, A. P., ANOSHINA, N. P.,
GOL'DFARB, Z. I., and PUDOVIK, A. N., Institute of Organic and Physical
Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR

"Mechanism of the Reaction of Diethyl Chlorophosphite With Acrylic Acid"

Leningrad, Zhurnal Obshchey Khimii, Sep 71, Vol 41, No 9, pp 1957-1961

Abstract: The study of the reaction of diethyl chlorophosphite with acrylic acid using P^{31} NMR and thermography gives rise to the conclusion that protonation of the phosphorus atom either completely initiates or predominates in the reaction which is followed by the addition of diethylphosphorus acid (an intermediate product formed in the early stage of the reaction) to the acrylic acid chloride. The experimental portion of the paper covers in detail the reactions of diethyl chlorophosphite with acrylic acid, diethyl acroyl phosphite with hydrogen chloride and diethylphosphorous acid with acrylic acid chloride.

1/1

USSR

UDC: 621.391.037.713

GOL'DEEL'D. L. N.

"Concerning the Problem of the Optimum Permissible Number of Repetitions in Communications Systems With Regeneration"

V sb. Materialy Nauch.-tekhn. konf. Leningr. elektrotekhn. in-ta svyazi. Vyp. 3 (Materials of the Scientific and Technical Conference of the Leningrad Electrical Engineering Institute of Communications--collection of works, No 3), Leningrad, 1971, pp 150-151 (from RZh-Radiotekhnika, No 3, Mar 72, Abstract No 3A15)

Translation: An expression is found for the generalized F-test optimum of the permissible number of repetitions of a signal element in a communications system with regeneration. It is shown that the use of multiple-parameter signals is preferable to using one-parameter signals in a channel with selective fading. Resumé.

1/1

USSR

UDC 621.391:519.2

G
GOLDFELD, L. N.

"Noise-Proofness of the Optimal Communications System with a Repeat Request in Code"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi. Vyp 2. (Materials of the Scientific and Technical Conference. Leningrad Electrotechnical Communications Institute, Vyp. 2), Leningrad, 1970, pp 222-229 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A63)

Translation: This article contains an investigation of a communications systems with a repeat request in code in the presence of noise in both the forward and feedback channels. The noise immunity of the investigated system is calculated.

1/1

USSR

UDC: 621.391.883.2

~~GOL'DFEL'D, L. S. N.~~

"Resistance to Interference in Communications Systems With Overinterrogation in Channels With Fading"

Tr. uchebn. in-tov svyazi. M-vo svyazi SSSR (Works of Academic Institutes of Communications. Ministry of Communications of the USSR), 1970, vyp. 51, pp 196-199 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5A20)

Translation: The author considers resistance to interference in a communications system with overinterrogation in the case of smooth fading in the direct and return channels conforming to Nakagami law, and additive interference of the "white" Gaussian noise type. It is shown that a communications system with overinterrogation which is optimum in the sense of the combined Bayes criterion may have greater resistance to interference in channels with fading than a single-channel optimum system. Two illustrations, bibliography of seven titles. N. S.

1/1

Biophysics

USSR

UDC 576.343

BINYUKOV, V. I., BORUNOVA, S. F., GOL'DFEL'D, M. G., ZHUKOVA, I. G., KUDLAY, D. G., KUZNETSOV, A. N., SHAPIRO, A. B., and OSTROVSKIY, D. N., Institute of Biochemistry imeni A. N. Bakh, Academy of Sciences USSR, Moscow, Institute of Chemical Physics, Academy of Sciences USSR, Moscow, and Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Moscow

"Investigation of Structural Transformations in Biomembranes by Means of the Spin- Probe Method: Temperature-Induced Changes in Bacterial Membranes"

Moscow, Biokhimiya, Vol 36, No 6, Nov/ Dec 71, pp 1149-1155

Abstract: To investigate changes induced in bacterial membranes by temperature changes within a physiological range, isolated and sound-disintegrated membranes of *M. lysodeikticus* and *E. coli* were mixed and incubated with the free iminoxyl radicals 1,1,3,3,7-pentamethyl-7,8-benzo-1,2,3,4-tetrahydropyrrolo-(3,4-beta)-indole-2-oxyl (I) and 2,2,6,6-tetramethyl-4-capryloyloxyloypiperidine-1-oxyl (II) serving as indicators of structural changes. Compound I was incorporated in the protein fraction and compound II in the lipid fraction of the membranes. The correlation observed between the spin diffusion of the test molecules and the temperature indicates that structural transformations take place in both the protein and the lipid fractions. The drastic changes which occur in the EPR signal of the radicals at elevated

USSR

BINYUKOV, V. I., et al., Biokhimiya, Vol 36, No 6, Nov/Dec 71, pp 1149-1155

temperatures suggest that high temperature induces conformational transformations in the protein fraction, and these induce structural transformations in the lipid fraction of bacterial membranes.

2/2

USSR

UDC: 681.332.65

GOL'DFEL'D, Ya. Yu.

"A Scaler"

USSR Author's Certificate No 292241, filed 3 Oct 69, published 1 Mar 71
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct
71, Abstract No 10B242 P)

Translation: The invention relates to the area of pulse and computer technology and can be used as a pulse generator for shaping or scaling devices. A disadvantage of conventional scaling circuits is low stability for a high scaling coefficient. The purpose of the invention is to create a device which provides a high scaling factor under the condition that the operability (stability) is practically the same as for scalers with a low scaling factor. The essence of the invention consists in the fact that the discharge device consists of m series-connected elements such as dynistors; accumulator elements are connected to the common points of all or some of these dynistors. One illustration.

1/1

= 19 =

1/2 018 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--EFFECT OF THE PARAMAGNETISM OF CONJUGATED POLYMERS AND THEIR
COMPLEXES ON NMR SPECTRA AND MACROMOLECULAR MOTION -U-
AUTHOR-(05)-MAKLAKOV, A.I., SHEPELEV, V.I., GOLOGAMMER, K.A., ZGADZAY,
E.A., TARASOV, B.G.
COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN. SER. A 1970, 12(2), 394-400

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--PARAMAGNETISM, CONJUGATED POLYMER, COMPLEX COMPOUND,
MACROMOLECULE, SCHIFF BASE, PYRIDINE COMPLEX, ACETYLENE, ELECTRON SPIN,
NMR SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0251

STEP NO--UR/0459/70/012/002/0394/0400

CIRC ACCESSION NO--AP0106907

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0106907

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NMR SPECTRA WERE OBTAINED FOR POLY(SHIFF BASES) (I) CONTG. :CHCH:NRN: (R EQUALS PYRIDINEDIYL) GROUPS, I COMPLEXES WITH BR, POLY(PHENYLACETYLENE) (II), AND II COMPLEXES WITH IODINE AT 77-330DEGREES K. ELECTRON SPIN LATTICE RELAXATION TEMP. DEPENDENCE WAS OBSD. THE CONDITIONS WERE DETD. UNDER WHICH THE PARAMAGNETIC CENTERS PRESENT IN THESE POLYMERS MAY HAVE AN EFFECT ON THE 2ND MOMENT OF NMR ABSORPTION LINES. AN ANOMALOUS EFFECT OF HALOGENS ON THE MOL. MOBILITY OF I AND II WAS OBSD.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--SYNTHESIS OF DISILYLUREAS -U-

AUTHOR--(04)-SHCHEKINA, I.V., KOZYUKOV, V.P., GOLDIN, G.S., TSIONO, S.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(4), 821-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--UREA SYNTHESIS, AMMONIA, ORGANOSILICON COMPOUND, ETHER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1065

STEP NO--UR/0079/70/040/004/0821/0823

CIRC ACCESSION NO--AP0128492

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128492

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PASSING DRY NH SUB3 INTO (OCNCH SUB2 CH SUB2 CH SUB2 SIME SUB2) SUB2 O IN ET SUB2 O GAVE 95PERCENT (R PRIME1 R PRIME2 NCONH(CH SUB2) SUB3 SIME SUB2) SUB2 Z (I) (Z EQUALS O, R PRIME1 EQUALS R PRIME2 EQUALS H), M. 127DEGREES. BUNH SUB2 SIMILARLY GAVE 85PERCENT I (Z EQUALS O, R PRIME1 EQUALS H, R PRIME2 EQUALS BU), M. 58-9DEGREES. SIMILARLY WERE PREPD. THE FOLLOWING I (70-92PERCENT) (Z, R PRIME1, AND R PRIME2 GIVEN): O, H, C SUB6 H SUB13, M. 42-4DEGREES; O, ET, ET, RESIN; C, BU, BU, RESIN; CH SUB2, ET, ET, M. 208-10DEGREES; CH SUB2, BU, BU, M. 187-8DEGREES; (CH SUB2) SUB3, H, BU, M. 38-9DEGREES; (CH SUB2) SUB3, H, C SUB6 H SUB13, RESIN; (CH SUB2) SUB3, ET, ET, RESIN; AND (CH SUB2) SUB3, BU, BU, RESIN.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--REACTION OF LOWER DIALKYLHYDRAZONES OF ACROLEIN WITH HYDRAZINE AND
METHYLHYDRAZINE -U-
AUTHOR-(03)-GOLDIN, G.S., BATURINA, L.S., SHOR, G.S.
COUNTRY OF INFO--USSR
SOURCE--KHIM. GETEROTSIKL. SOEDIN. 1970, (3), 429
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYDRAZONE, ALDEHYDE, HYDRAZINE, CONDENSATION REACTION, ORGANIC
SYNTHESIS, HETEROCYCLIC NITROGEN COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0854 STEP NO--UR/0409/70/000/003/0429/0429
CIRC ACCESSION NO--AP0124517
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124517

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONDENSATION OF THE TITLE COMPODS.
IN ETH AT 75DEGREES 10-15 HR IN THE PRESENCE OF AMMONIUM SALTS GAVE THE
FOLLOWING I (R, B.P.-MM, AND N PRIME20 SUBD GIVEN): H, 63-4DEGREES 40,
1.4782; AND ME, 109-10DEGREES-760, 1.4523. FACILITY: GOS.
NAUCH. ISSLED. INST. KHIM. TEKHNOL. ELEMENTOORG. SOEDIN., MOSCOW, USSR.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--300CI70
TITLE--TRANSHYDRAZINATION OF HYDRAZONES -U-
AUTHOR-(03)-GOLDIN, G.S., TSIOMO, S.N., SHOR, G.S.
CCUNTRY OF INFO--USSR
SOURCE--ZH. ORG. KHIM. 1970, 6(4), 754-7
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--HYCRAZINE, HYDRAZONE, CHEMICAL REACTION

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1956 STEP NO--UR/0366/70/006/004/0754/0757
CIRC ACCESSION NO--AP0125545
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125545

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REFLUXING OF ET SUB2 NNH SUB2 WITH ME SUB2 NN:CRR PRIME1 AND 0.5PERCENT NH SUB4 CL GAVE 56-80PERCENT ET SUB2 NH:CRR PRIME1 (I). SIMILARLY, STARTING WITH ME SUB2 NNH SUB2 ME SUB2 NN:CRR PRIME1 (II) WERE PREPD. (COMPD. R AND R PRIME1 GIVEN): I, ET, ET; I, H, H; I, H, ME; I, H, ET; I, H, PR; I, H, ISO-PR; I, H, ISO-BU; I, ME, ME; I, ME, ET; I, ME, PR, I ME, ISO-PR; II, H, H; II, H, ME; II, H, ET; II, H, PR; II, H, ISO-PR; II, H ISO-BU; II, ME, ME, II, ME, ET; II, ME, PR; II, ME, ISO-PR; II, ME, ISO-BU. THE TRANSYDRAZINATION IS A REVERSIBLE REACTION; THE POSITION OF EQUIL. DEPENDS ON R AND R PRIME1. THE TIME REQUIRED TO ATTAIN EQUIL. INCREASES WITH THE MOL. WT. OF THE REACTANTS.

UNCLASSIFIED

1/2 011 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--SYNTHESIS OF POLYSILYLUREAS AND POLYSILYLUREYLENES -U-
AUTHOR--(04)-GOLDIN, G.S., TSIOMO, S.N., SHCHEKINA, T.V., KOZYUKOV, V.P.
COUNTRY OF INFO--USSR
SOURCE--VYSOKOMOL. SOEDIN., SER. B 1970, 12(4), 307-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MOLECULAR STRUCTURE, SPECTROSCOPIC ANALYSIS, ISOCYANATE, UREA,
SOLUBILITY, ORGANIC SOLVENT, ORGANOSILICON COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--3006/1240 STEP NO--UR/0460/70/012/004/0307/0309
CIRC ACCESSION NO--AP0134914
UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--APO134914

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. OLIGOMERIC POLY(SILYLUREAS) (I, R
EQUALS O, CH SUB2, (CH SUB2) SUB2, OR (CH SUB2) SUB3) WERE PREPD. BY A
REACTION OF BIS((GAMMA ISOCYANATOPROPYL)DIMETHYLSILYL)ALKANES (II) OR
1,3,BIS((GAMMA ISOCYANATOPROPYL),1,1,3,3,TETRAMETHYLDISILOXANE (III) WITH
MENH(CH SUB2) SUB2 NHME. REACTION OF N SUB2 H SUB4 OR PHNHNH SUB2 WITH
II OR III GAVE POLY(SILYLUREYLENES) (IV, R EQUALS O OR (CH SUB2) SUB3),
ALMOST INSOL. IN ORG. SOLVENTS. THE STRUCTURE OF THE POLYMERS WAS DETD.
BY IR SPECTROSCOPY AND ELEMENTAL ANAL.

UNCLASSIFIED

USSR

UDC[539.125/.128.004+577.391](023)

GOL'DIN, L.L., DZheLEPOV, V.P., LOMANOV, M.F., SAVChENKO, O.V., and KHOROShKOV, V.S.

"The Use of High-Energy, Heavy Charged Particles in Medicine"

Moscow, Uspekhi Fizicheskikh Nauk, Vol 110, No 1, May 73, pp 77 - 99

Abstract: Present methods of radiation treatment involve primarily the use of X-rays, gamma radiation, and light particles such as electrons. These techniques are severely limited by the necessity of restricting radiation damage to non-cancerous tissues and the difficulty of controlling the depth of penetration of such radiation. The development of more powerful accelerators makes possible the use of heavy charged particles at high energies. The penetration of these particles through various materials can be much more closely controlled, making it possible to confine the damaging effects to the malignant tissues with much greater accuracy. This effect is further strengthened by the relatively low scattering of heavier particles. For all radiation therapy except intercranial surgery and a few other special cases, a beam of Pi-mesons appears to offer the best characteristics.

1/2

USSR

GOL'DIN, L. L., et al., Uspekhi Fizicheskikh Nauk, Vol 110, No 1, May 73, pp 77-99

The article discusses the uses of radiation therapy, both alone and in combination with surgery, describes the effects of various types of radiation on the human body, and discusses possible future developments. Several radiation therapy installations are described, and there is a survey of experiments in various countries. The authors believe that large-scale centers for high energy and heavy-particle radiation therapy should be established now and that the development of suitable Pi-meson radiation apparatus should be carried out.

Four tables, 15 illustrations, 48 bibliographic citations (mostly from western sources).

2/2

- 44 -

1/2 024 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THE USE OF EXISTING AND THE POSSIBILITY OF DESIGNING NEW SOVIET
ACCELERATORS OF HEAVY PARTICLES FOR RADIUM TREATMENT -U-
AUTHOR-(02)-DZHELEPOV, V.P., GOLDIN, L.L.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 5, PP 19-28

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ALPHA PARTICLE, PROTON, MESON, PARTICLE ACCELERATOR,
RADIATION BIOLOGIC EFFECT, RADIOTHERAPY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1998/0373

STEP NO--UR/0241/70/015/005/0019/0028

CIRC ACCESSION NO--AP0121061

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0121061

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PHYSICAL PECULIARITIES OF BEAMS OF HEAVY PARTICLES (PROTONS, ALPHA PARTICLES, HEAVY IONS, PI MINUS MESONS), THEIR RELATIVE MERITS AND EFFECTIVENESS FROM THE VIEWPOINT OF RADIUM TREATMENT OF DEEP SEATED PATHOLOGICAL FOCI ARE DISCUSSED. THE AUTHORS DESCRIBE PROTON BEAMS OBTAINED BY MEANS OF ACCELERATOR OF HEAVY PARTICLES IN THE USA, SWEDEN AND USSR, THE PROJECT OF RECONSTRUCTION OF THE SYNCHROCYCLOTRON OF THE LABORATORY OF NUCLEAR PROBLEMS (DUBNA), FOR THE IMPROVEMENT OF THE CHARACTERISTICS OF MEDICAL BEAM, AS WELL AS THE POSSIBILITY OF DESIGNING SPECIALIZED PROTON ACCELERATORS FOR MEDICAL PURPOSES. FACILITY: OB'YEDINENNYI INSTITUT YADERNYKH ISSLEDOVANIY AND INSTITUT TEORETICHESKOY I EKSPERIMENTAL'NOY FIZIKI.

UNCLASSIFIED

1/2 025 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--THE FORMATION OF DOSE FIELDS ON PROTON BEAM OF ITEP ACCELERATOR -U-
AUTHOR--(05)-BLOKHIN, S.I., GOLDIN, L.L., KLEYNBOK, YA.L., LOMANOV, M.F.,
ONDOVSKIY, K.K.
COUNTRY OF INFO--USSR
SOURCE--MEDITSINSKAYA RADIOLOGIYA, 1970, VOL 15, NR 5, PP 64-68
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--MEDICAL APPARATUS, PROTON ACCELERATOR, RADIATION
DOSAGE/(U)ITEP ACCELERATOR

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REFL/FRAME--1997/1958 STEP NO--UR/0241/70/015/005/0064/0068
CIRC ACCESSION NO--AP0120601
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0120601

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE DISCUSSES THE
TECHNIQUE OF FORMATION OF DOSE FIELDS OF WIDE PROTON BEAMS ALONG THE
AXIS OF THE BEAM AND IN TRANSVERSE DIRECTION, AS WELL AS THE
CONSTRUCTIVE FEATURES SPECIFIC FOR THE EQUIPMENT USED FOR THESE
PURPOSES. DOSE FIELDS FORMED ON A MIDEICO BIOLOGICAL PROTON BEAM OF
ITEP ACCELERATOR. FACILITY: INSTITUT EKSPERIMENTAL'NOY I
TEORETICHESKOY FIZIKI AN SSSR.

UNCLASSIFIED

Instruments and Equipment

USSR

UDC 615.849-72

DZHELEPOV, V. P. and GOL'DEN, L. I., Joint Institute for Nuclear Research and
Institute of Theoretical and Experimental Physics

"Use of Existing Heavy Particle Accelerators for Radiation Therapy and the Possi-
bilities of Designing New Ones"

Moscow, Meditsinskaya Radiologiya, No 5, 1970, pp 19-28

Abstract: The physical characteristics of beams of heavy particles (protons, alpha-particles, heavy ions, pi-mesons), and their relative merits and effectiveness from the standpoint of radiation treatment of deep-seated pathological foci are discussed. Proton beams obtained from heavy-particle accelerators in the USA, Sweden and USSR are described. The project for the reconstruction of the synchro-cyclotron at the Laboratory of Nuclear Problems, Dubna, in order to improve the characteristics of the medical beam, is discussed as well as the possibilities of designing specialized proton accelerators for medical purposes.

1/1

Epidemiology

USSR

UDC 576.851.71+576.858.73].097.2.077.34

GOL'DIN, R. B., PRUSAKOVA, Z. M., and SHAKHANINA, K. L., Military Medical Academy imeni S. M. Kirov, Leningrad, and Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"Detection of Rickettsial and Ornithosis Antigens in Indirect Hemagglutination Test by Means of Erythrocytes Chemically Combined With Polycondensed Immune Globulins. Report I: Use of Sensitized Erythrocytes Prepared With Boron-fluoride Bis-Diphenyldiazonium for Rapid Detection of Agents of Tickborne Rickettsioses

Moscow, Voprosy Virusologii, No 3, May/Jun 70, pp 366-371

Abstract: A new modification of the indirect hemagglutination reaction for rapid detection of rickettsial and ornithosis antigens has been developed. The results of tests and comparative evaluation of red blood cell (RBC) preparations were presented. RBC preparations were made by conjugation of erythrocytes with polycondensed globulins of rabbit sera immune to Dermacentor sibiricus, D. rickettsi and other agents of tickborne rickettsiosis. 4,4-bis-diphenyldiazonium boronfluoride, a pure, highly stable bifunctional compound providing standard conditions for making RBC preparations was used for polycondensation of immune globulins and chemical conjugation with formalinized

1/2

• USSR

GOL'DIN, R. B., et al, Voprosy Virusologii, No 3, May/Jun 70, pp 366-371

RBC. All batches of RBC preparations made according to this method were strictly group-specific. No nonspecific reactions were observed with extracts from organs of noninfected animals. The sensitivity of the indirect hemagglutination reaction was 300-500 times higher than that of the complement fixation reaction and 20-30- and 10-50 times higher than that of the indirect hemagglutination inhibition reaction (with RBC sensitized with rickettsial antigen), and fluorescent antibody technique, respectively.

2/2

- 44 -

1/2 027 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--DETECTION OF RICKETTSIAL AND ORNITHOSIS ANTIGENS IN INDIRECT HEM
AGGLUTINATION TEST BY MEANS OF ERYTHROCYTES CHEMICALLY COMBINED WITH
AUTHOR--(03)-GOLDIN, R.B., PRUSAKOVA, Z.M., SHAKHANINA, K.L.

COUNTRY OF INFO--USSR

SOURCE--VOPROSY VIRUSOLOGII, 1970, NR 3, PP 366-371

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RICKETTSIA, ORNITHOSIS, ANTIGEN, ERYTHROCYTE, TICK,
HEMAGGLUTINATION INHIBITION TEST, TICK, FLUORESCENT ANTIBODY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0686

STEP NO--0402/70/000/003/0366/0371

CIRC ACCESSION NO--AP0126401

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0126401

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A NEW MODIFICATION OF INDIRECT HA TEST FOR RAPID DETECTION OF RICKETTSIAL AND ORNITHOSIS ANTIGENS WAS DEVELOPED. THE PAPER PRESENTS THE RESULTS OF TRIALS AND COMPARATIVE EVALUATION OF RED BLOOD CELL (RBC) PREPARATIONS MADE BY CONJUGATION OF ERYTHROCYTES WITH POLYCONDENSED GLOBULINS OF RABBIT SERA IMMUNE FOR D. SIBIRICUS, D. RICKETTSII AND OTHER AGENTS OF TICK BORNE SPOTTED FEVERS.

FOR POLYCONDENSATION (CHEMICAL "SEWING") OF IMMUNE GLOBULINS AND THEIR CHEMICAL CONJUGATION WITH FORMALINIZED RBC 4,4,BISDIIPHENYLDIAZONIN BOROFUORIDE WAS USED WHICH WAS A PURE, HIGHLY STABLE BIFUNCTIONAL COMPOUND PROVIDING STANDARD CONDITIONS FOR MAKING RBC PREPARATIONS. ALL BATCHES OF RBC PREPARATIONS MADE ACCORDING TO THIS METHOD WERE STRICTLY GROUP SPECIFIC. THEY GAVE POSITIVE CROSS REACTIONS WITH ANTIGENS OF RICKETTSIA BELONGING TO THE GROUP OF AGENTS OF TICK BORNE SPOTTED FEVERS AND AT THE SAME TIME DID NOT INTERACT WITH ANY OF HETEROLOGOUS RICKETTSIA OR BACTERIA. NO NONSPECIFIC REACTIONS WERE OBSERVED WITH EXTRACTS FROM THE ORGANS OF UNINFECTED ANIMALS EITHER. AT THE SAME TIME IT WAS SHOWN THAT UTILIZATION OF THESE RBC PREPARATIONS INSURED IN OUR EXPERIMENTS HIGH SENSITIVITY OF INDIRECT HA TEST. ITS SENSITIVITY WAS 300-500 FOLD HIGHER THAN THAT OF CFT AND 20-30 AND 10-50 FOLD HIGHER THAN THAT OF INDIRECT HI TEST (WITH RBS SENSITIZED WITH RICKETTSIAL ANTIGEN) AND FLUORESCENT ANTIBODY TECHNIQUE, RESPECTIVELY.

FACILITY: VOYENNO-MEDITSINSKAYA AKADEMIYA IMENI S. M. KIROVA,
LENINGRAD, I INSTITUT EPIDEMIOLOGII I MIKROBIOLOGII IMENI N. F. GAMALEI
AMN SSSR, MOSKVA.

UNCLASSIFIED

USSR

UDC 541.15+539.199+538.113

GOL'DIN, S. I., SHARPATYY, V. A., and MARKEVICH, S. V., Institute of Physico-Organic Chemistry, Belorussian Academy of Sciences, Minsk, and Institute of Chemical Physics, USSR Academy of Sciences, Moscow

"Formation and Conversion of Radicals in Glucose Polymers during γ -Radiolysis"

Moscow, Doklady Akademii Nauk SSSR, Vol 201, No 1, Nov-Dec 1971, pp 133-136

Abstract: The epr method is used to study the nature of radicals formed during radiolysis (77° and 300°K) of dry samples of native dextrane, polyglucin and glucose, both undeuterated and deuterated (70-80% in polyglucin, 80-90% in glucose), in the hydroxyl groups.

The majority of radicals formed during radiolysis of glucose and its high polymers were identical; the basic differences were associated with structural peculiarities of the polymers and the glucose, and with the presence of some water of crystallization.

Tables are given to show the characteristics of radicals identified by epr spectra; also data on the properties of radicals identified in glucose, where differences exist in comparison with those in polysaccharides. It
1/2

USSR

GOL'DIN, S. I., et al., Doklady Akademii Nauk SSSR, Vol 201, No 1, Nov-Dec 1971, pp 133-136

is believed that the primary radicals are formed during cleavage of C---H and C---OH bonds.

2/2

- 82 -

USSR
ELECTRONICS
Amplifiers

UDC: 621.375.73

USSR

GOL'DIN, S. M. (Deceased) and REPINSKIY, V. N.

"Phase-Amplitude and Amplitude Characteristics of a Regenerative Parametric Amplifier"

Kiev, Izvestiya VUZ SSSR--Radioelektronika, No 9, 1972, pp 1114-1121

Abstract: This paper investigates the regenerative parametric amplifier with a strong input signal, and derives a formula for the phase-amplitude characteristic of the circuit. The effect of varactor nonlinearity on the amplitude characteristic of the regenerative parametric amplifier is also investigated. An expression for the amplitude characteristic of the parametric amplifier, obtained in an earlier publication (V. S. Etkin, et al, Parametricheskiye sistemy na poluprovodnikovyykh diodakh -- Parametric Systems Using Semiconductor Diodes -- Izd-vo "Sovetskoye radio," 1964) is made more accurate in the present paper by taking into account the detuning change with variations in signal amplitude. It is found that the shift in resonant frequency of the amplifier tuned circuit with a change in signal amplitude leads to an increase or decrease in absorption power of the regenerative parametric amplifier depending on the initial detuning of the circuit.

1/1

USSR

UDC 51:155.001.57:681.3.06

GOL'DIN, S. V.

"The Use of A Priori Information in Recognition of Geophysical Objects"

Tr. Zap.-Sib. N-i. Geologo-razved. Neft. In-t [Works of Western Siberian Geological Prospecting Scientific Research Institute], No 36, 1970, pp 46-68, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V649 by the author).

Translation: An analysis is presented of a statistical statement of the problem of pattern recognition, in which all available a priori information on the parameters characterizing the objects being classified and the structure of the learning material is considered. A review is presented of optimality criteria and solutions of the problem of statistical classification with finite learning material. The basic results of the article relate to the construction of classification tests in the case of linear dependence of mathematical expectation of the vector characteristic on unknown parameters.

USSR

UDC 519.281

GOL'DIN, S. V.

"Use of Multivariate Regression in Statistical Classification Problems"

Tr. Zap-sib. N-i Geologo-razved. Neft. In-t, [Works of Western Siberian Scientific Research and Geological Prospecting Petroleum Institute], 1970, No 36, pp 156-164, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V180 by the author).

Translation: In classification of objects, it is frequently necessary to consider certain characteristics (called nondividing characteristics) which have identical distribution in objects of different classes and the entire information of which is determined by their correlation with other characteristics. When nondividing characteristics are present, regression of the remaining characteristics should be constructed in the nondividing characteristics and classification should be performed on the basis of deviations from the regression estimates. It is demonstrated that this causes an increase in the power of the T^2 criterion. Regularization of the corresponding classification criteria is studied.

1/1

USSR

UDC 519.281

GOL'DIN, S. V.

"Optimal Estimate of Regression Coefficients in the Case of Degenerate or Poorly Founded Noise Matrix"

Tr. Zap-sib. N-i Geologo-razved. Neft. In-t, [Works of Western Siberian Scientific Research and Geological Prospecting Petroleum Institute], 1970, No 36, pp 103-108, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V179 by the author).

Translation: When the method of maximum likelihood is used to estimate linear regression parameters in the presence of correlated noise, the problem arises of numerical instability in the inversion of the covariation noise matrix. In this work, this instability is eliminated by introducing additional parameters.

1/1

- 19 -

USSR

UDC 519.281

GOL'DIN, S. V., BEMBEL', R. M.

"Certain Methods of Regularization of the Method of Least Squares in Processing Geophysical Observations"

Tr. Zap-sib. N-i Geologo-razved. Neft. In-t, [Works of Western Siberian Scientific Research and Geological Prospecting Petroleum Institute], 1970, No 36, pp 86-102, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V178 by the authors).

Translation: Methods of regularization are significantly determined by the physical sense of the solution and the available a priori information concerning the unknown parameters. Therefore, in each specific case we must find the most adequate methods. This work analyses three methods for regularization of systems of normal equations from the least squares method: 1) decreasing the number of parameters estimated; 2) estimation of linear combinations with least dispersion; 3) consideration of the a priori distribution of parameters. In developing the second of these methods, a games theory interpretation is suggested for problems of solution of degenerate systems. In all cases, regularization of poorly founded and degenerate systems depends on the available a priori information.

1/1

USSR

UDC 519.281

GOL'DIN, S. V., MATYS, L. I.

"Regularization of the T^2 Criterion in Problems of Statistical Classification"

Tr. Zap-sib. N-i Geologo-razved. Neft. In-t, [Works of Western Siberian Scientific Research and Geological Prospecting Petroleum Institute], 1970, No 36, pp 109-121, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. 5V162 by the authors).

Translation: Methods are studied, allowing the computational stability of the T^2 criterion to be improved when it is constructed using poorly founded co-variation sampling matrices.

USSR

UDC 517.9:533.7

GOL'DIN, V. Ya., KALITKIN, N. N., LEVITAN, Yu. L., and ROZHDESTVENSKIY, B. L.

"Computing Two-Dimensional Flows from Detonations"

Moscow, Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, No 6, 1972, pp 1606-1611

Abstract: Under the assumption that the explosion of each element of a space in an explosive material occurs instantaneously, a difference method for calculating the two-dimensional gas dynamics resulting from a detonation is developed. It is noted that there is a difficulty in the two-dimensional case that does not exist in the unidimensional case: the strong distortion in the Lagrangian grid occurring in the computation. As a result, only the regions with an axis of symmetry are considered, with the explosion originating at a point on the axis. Three grid configurations spherical, rectangular, and triangular are described. A system of equations for the two-dimensional gas dynamics is given in terms of Lagrange variables, and the structure of the difference system using the quadrangular grid as an example is developed. The results obtained were compared with a known self-modeling solution, and a close agreement between the two was shown.

1/2

USSR

GOL'DIN, V. Ya., et al., Zhurnal Vychislitel'noy Matematiki i Matematicheskoy Fiziki, No 6, 1972, pp 1606-1611

The authors express their appreciation to B. D. Moiseyenko for his discussion of the work and to I. A. Govorukhin for his assistance with its formulation.

2/2

- 74 -

GOL'DIN, V. Ya.

Public

JPRS 55059
10 April 1973

UDC: 517.9:533.7

CALCULATION OF TWO-DIMENSIONAL FLAMES WITH DETONATION

[Article by V. Ya. Gol'din, N.N. Kalitkin, Yu.L. Levin, B.L. Rozhnovetskiy; Moscow, Akademiya Nauk SSSR, Institut Vychislitel'noy Mekhaniki, Matematicheskiy Kibernet. Tsentr, Vol. 12, No. 6, November-December 1972, signed to press 25 January 1973, pp 1609-1611]

A difference method is developed for calculation of two-dimensional gas-dynamics problems with detonation, using the Lagrange variables. Three versions of difference plans are studied, corresponding to various configurations of the squares of a grid. A comparison is presented with the self-similar solution of the problem of a point explosion, showing the satisfactory accuracy of the calculations.

1. Detonation Model

Two-dimensional detonation develops in a number of problems, for example the explosion of a nonspherical charge, the initiation of an explosion on the surface of a charge, explosion in a compact, limited medium. As we know, detonation is a complex phenomenon [1]. A strong shock wave travels through the explosive. The heating of the explosive in the shock wave causes rapid chemical reactions liberating large quantities of energy. This energy sustains the process of propagation of the shock wave.

Accurate calculation of chemical reactions is necessary in problems concerning failure of detonation; we note, however, that the reactions themselves and their constants are generally unknown. When commercial charges of high-energy explosives detonate, we can limit ourselves to a simple gas-dynamic model of detonation [2]. In this model, the equation of state of the explosive in front of the shock wave has no influence on the parameters of the detonation wave (velocity, pressure, etc.). For definition, we will describe the explosive by its shock adiabatic curve:

$$p = \epsilon_1(\rho/\rho_0)^n - 1 = f(\rho),$$

- 1 -

(1 - USSR - 1)

where the values of the coefficients c_1 and n may not agree with the actual values and change over broad limits. We will assume that the explosion of each element of volume of the explosive (cell) occurs instantaneously at a certain moment in time. The condition of explosion of a cell is an increase in the density in the cell. If the value of density ρ reaches a certain critical value (ρ_{cr}), the cell explodes.

In most problems, strong shock waves do not move through the explosion products (EP). In these problems, entropy can be considered practically constant and we can take the true isentrope as the equation of state of the EP:

$$p \sim \rho^{\gamma} = h(\rho),$$

defined experimentally and theoretically. Thus, we write the equation of state as

$$p = (1 - \beta)h(\rho) + \beta U^2(\rho),$$

where the explosion corresponds to a transition from $\zeta = 0$ to $\zeta = 1$ (assuming that $\rho \geq \rho_{cr}$).

This model of detonation is convenient for use in gas-dynamic calculation plans, based on spreading of strong explosions by introducing mathematical viscosity. It is natural to select plans based on Lagrange coordinates, in order to avoid spreading of contact ruptures. The difference plan is constructed as was done in [3]. Similar difference plans for two-dimensional gas dynamics problems were also studied by other authors, for example Schulitz, Millis, N. A. Koltitsyev, I. B. Stremov and Ye. V. Malinovsky. In the two-dimensional case, a difficulty in principle arises which does not arise in the one-dimensional case. This difficulty is the strong distortion of the Lagrange grid during the course of calculation. This fact forced us to use different versions of grids in calculation. In the following, we will study only areas which have an axis of symmetry, when the explosion is initiated at one of the points on this axis. To initiate an explosion, at the initial moment we will assume increased density in several cells near the point of the explosion and, consequently, increased pressure in these cells.

1.2. Difference Grids

Let us describe three configurations of grids, which we will arbitrarily call spherical, rectangular and triangular.

1. Spherical grid. If an explosion is initiated at an internal point in the explosive, the detonation wave is at first an expanding sphere. It is natural to use this symmetry to construct the difference grid.

USSR

UDC 8.74

GOL'DIN, V. YE.

"Hierarchical Structure of an Associative Memory"

Tr. Leningr. in-t aviats. priborostr. (Works of the Leningrad Institute of Aviation Instrument Making), 1972, vyp. 74, pp 109-114 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V525)

Translation: A mathematical model of an element designed for the construction of an associative memory is described. This element is called the PM. It is demonstrated that the PM forms a complete system of functions.

The utilization of the PM as a specific element of an associative memory is illustrated by examples, and the basic principles of constructing an associative memory from the PM are demonstrated. The basic associative problems are strictly stated and it is demonstrated that in solving them for an arbitrary binary sequence of length l the associative memory must contain $4 \cdot 2^l - 2$ PM with a parameter zero. The estimate was found to be trivial inasmuch as the problem of how many PM will actually be used for each specific sequence was not stated.

The conclusions that the hierarchical structure of the memory is optimal and that for the solution of the associative problems the memory must comprise two symmetric substructures one of which is the inverse time structure, that is, it can theoretically solve the same associative problems with respect to the memory sequence reversed in time, are of interest.

1/1

USSR

UDC 669.71.004.2(088.8)

GOL'DIN, YE. L., POPCHENKOV, I. N.

"Covering for an Aluminum Electrolyzer with Roasted Anodes"

USSR Author's Certificate No 256284, Filed 15 May 68, Published 2 Nov 70 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G213P)

Translation: The covering consists of an umbrella with sliding caps. In order to improve the efficiency of trapping the gases, the caps are made hollow and they are equipped with uniform suction panels located on the path of the released gases with the electrolyzer tops raised. There are 2 illustrations.

1/1

USSR

UDC 669.71.472(088.8)

POPCHENKOV, I. N., GOL'DIN, YE. L., DENISOV, L. I.

"Device for Trapping Dust From Gases"

USSR Author's Certificate No 280861, filed 1 Nov 66, published 3 Dec 70 (from RZh-Metallurgiya, No 7, Jul 1971, Abstract No 7G214P)

Translation: A device for trapping dust from gases released from Al-electrolyzers with a self-igniting anode and an upper conductor including a second-stage gas exhaust in the form of a hood above the operating opening of the electrolyzer is introduced. For more effective trapping of dust, the side walls of the hood are executed in the form of suspended movable shields with perforated sheets and turnable jalousie flaps attached to them. The overall view of the device forming the panel gas exhaust and the overall view of the device forming the side gas exhaust are presented.

1/1

- 22 -

1/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--PLASTIC RESECTION OF THE STOMACH AND GASTRECTOMY -U-

AUTHOR--(02)-IVANOV, V.A., GOLDIN, V.A.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 4, PP 25-30

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DUODENUM, JEJUNUM, PANCREAS, PLASTIC SURGERY, STOMACH

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1241

STEP NO--UR/0053/70/000/004/0025/0030

CIRC ACCESSION NO--AP0054136

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054136

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORO ELABORATED AND TESTED IN THE CLINIC A TECHNIQUE OF GASTRIC RESECTION AND GASTRECTOMY WITH INCLUSION OF THE DUODENUM INTERSECTED IN ONE PLACE BY A LOOP OF THE JEJUNUM, GASTROENTEROSTOMY IS ESTABLISHED AT THE LOWER CURVATURE. OUT OF 55 GASTRECTOMIES 25 WERE PERFORMED WITH INCLUSION OF THE DUODENUM. IN THE POSTOPERATIVE PERIOD AFTER PLASTIC OPERAT64NS 3 PATIENTS DIED: 2 AS THE RESULT OF PANCREONECROSIS AND 1, DUE TO FAILURE OF THE JEJUNODUODENOSTOMY. OUT OF 101 PARTIAL RESECTIONS OF THE STOMACH 35 PLASTIC OPERATIONS WERE PERFORMED WITH ONE LETHAL OUTCOME. THE FUNCTIONAL RESULTS, STUDIED IN THE IMMEDIATE AND REMOTE PERIODS, PROVED TO BE MORE SATISFACTORY AFTER OPERATIONS WITH INCLUSION OF THE DUODENUM.

UNCLASSIFIED

USSR

UDC 615.832.97/.98

SIROTKINA, M. G., GOL'DINA, B. G., GUTKIN, V. S., KOMAROV, B. A.,
KONDRAT'YEVA, N. I., MIKHALOYTS, S. N., and RUDNYA, P. G., All Union
Scientific Research Institute of Surgical Apparatus and Instruments,
Ministry of Health USSR

"Status of and Prospects for Development of Cryosurgery"

Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 1,
1970, pp 3-10

Abstract: The development of cryosurgery during the past 20 years has been purely empirical. A variety of cooling agents, degrees of cooling, times of exposure, cycles of freezing and complexity of apparatus have been used for the same purposes. Thus, while the results have been encouraging in a number of specialties (dermatology, ophthalmology, gynecology, urology, and some others), many questions remain. What is needed now is a thorough study of the anatomical and physiological characteristics of the organs to be treated and the effects of exposure to cold, as well as a scientific determination of the optimum parameters of cryosurgical instruments and the most efficient way of using them. As a model for such studies, the authors describe
1/2

USSR .

SIROTKINA, M. G., et al., Moscow, Eksperimental'naya Khirurgiya i Anesteziologiya, No 1, 1970, pp 3-10

the results immediate and long-term, of experiments on dogs whose tonsils were destroyed with a specially constructed cryoapplicator using liquid notrigen (-196° C).

2/2

- 142 -

Acc. Nr:

AP0040312- **G**

Ref. Code: UR0481

PRIMARY SOURCE: Eksperimental'naya Khirurgiya i Anesteziologiya,
1970, Nr 1, pp 3-10

ON THE STATE AND PERSPECTIVES IN DEVELOPMENT OF CRYOSURGERY

Sirotkina, M. G.; Gol'dina, B. G.; Gutkin, V. S.;
Komarov, B. A.; Kondrat'yeva, N. I.; Mikhaloyts, S. N.;
Rudnya, P. G.

The trends of development and practical evaluation of cryosurgical methods of treatment in the last two decades are presented. Their use being of pure empiric nature it has been decided to use canine palatine tonsils as a suitable model for scientific optimization of demands applied to cryosurgical apparatuses and rationalization of their application. The dynamics of general and local changes after tonsillectomy in the fluid nitrogen (-196°C) as a cold source have been studied by clinical, haematological and pathomorphological investigations. By lowering the temperature in the tissue under tonsil to -7°C a subsequent expressed destructive effect can be anticipated. Complete disappearance of the tonsil tissue was observed in 51.8 per cent of cases, partial destruction—in 35.1 per cent. The authors believe that along with an intensive biological search for complex evaluation of the method a simple cryogen technique for a number of surgical fields to be equipped with must be developed.

//

REEL/FRA
19741743

02.12

1/2 032 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EXPERIMENT WITH THE NONABSORBING, LONGITUDINAL MODE DIFFRACTION
SELECTOR OF AN OPTICAL RESONATOR -U-
AUTHOR-(02)-GOLDINA, N.D., TROITSKIY, YU.V.
COUNTRY OF INFO--USSR
SOURCE--OPT. SPEKTRCSK. 1970, 28(3), 595-7
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ZINC SULFIDE, LIGHT DIFFRACTION, MONOCHROMATOR, RESONATOR,
HELIUM NEON LASER, SULFIDE LAYER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAHE--2000/1135

STEP NO--UR/0051/70/028/003/0595/0597

CIRC ACCESSION NO--AP0124790

UNCLASSIFIED